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NABL ACCREDITED AS PER ISO/IEC 17025:2005

Job No.: CECTC-UHC-W.No.13-2016-17

Date: 30.06.2016

TEST REPORT

CLIENT	:	**Assistant Executive Engineer,** Shetty halli Sub Division, BBMP, Bangalore.
AGENCY	:	**Sri.Umesh H.C,** Contractor, Bangalore.
NAME OF THE WORK	:	Repairs to Culverts and drain in ward no.13, Shetty halli sub division, BBMP, Bangalore.
REFERENCE	:	EE/DD/WO/81/2015-16 Dated:24.03.2016
SAMPLE ID	:	Cement
SAMPLES SUPPLIED BY	:	AGENCY

The results of the tests conducted on the cement sample are as follows:

Sl.No	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 12269-1987
1	a) Initial Setting Time	IS-4031 (Part -5)	140 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part -5)	390 Minutes	Not More than 600 Minutes
2	Soundness	IS-4031 (Part 3) by the Le-Chatelier method	1 mm	Not more than 10 mm
3	Standard Consistency	IS-4031 (Part -4)	29.00 %	-

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Job No.: CECTC-UHC-W.No.13-2016-17 Date : 30.06.2016

TEST REPORT ON FINE AGGREGATES (SAND)
IS 383-1970 (RA- 2002)

Client : **Assistant Executive Engineer,** Shetty halli Sub Division, BBMP, Bangalore.

Agency : **Sri.Umesh H.C,** Contractor, Bangalore.

Name of Work : Repairs to Culverts and drain in ward no.13, Shetty halli sub division, BBMP, Bangalore.

Reference : EE/DD/WO/81/2015-16 Dated:24.03.2016

Date of Testing : 30.06.2016

Material : Sand

Total wt. of aggregates in gms = **1000**

Is Sieve Size in mm	Weight Retained (gm)	Retained Weight in %	Cumulative Retained Weight in %	Cumulative Weight Passing in %	Spec.Limits For Zone-II
10	0	0	0	100	100
4.75	78	7.80	7.80	92.2	90-100
2.36	82	8.20	16.00	84.0	75-100
1.18	139	13.90	29.90	70.1	55-90
600 Micron	215	21.50	51.40	48.6	35-59
300 Micron	318	31.80	83.20	16.8	8-30
150 Micron	141	14.10	97.30	2.7	0-10

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Job No.: CECTC-UHC-W.No.13-2016-17

Date : 30.06.2016

TEST REPORT ON COARSE AGGREGATES
IS 383-1970 (RA- 2002)

Client : **Assistant Executive Engineer,** Shetty halli Sub Division, BBMP, Bangalore.

Agency : **Sri.Umesh H.C,** Contractor, Bangalore.

Name of Work : Repairs to Culverts and drain in ward no.13, Shetty halli sub division, BBMP, Bangalore.

Reference : EE/DD/WO/81/2015-16 Dated:24.03.2016

Date of Testing : 30.06.2016

Material : 40mm Aggregates

Total wt. of aggregates in gms = **15000**

Is Sieve Size in mm	Weight Retained (gm)	Retained Weight in %	Cumulative Retained Weight in %	Cumulative Weight Passing in %	Spec.Limits
80	0	0	0	100	100
40	381	2.54	2.54	97.46	95-100
20	8325	55.50	58.04	41.96	30-70
10	3415	22.77	80.81	19.19	10-35
4.75	2461	16.41	97.21	2.79	0-5

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Job No.: CECTC-UHC-W.No.13-2016-17 Date : 30.06.2016

TEST REPORT ON COARSE AGGREGATES
IS 383-1970 (RA- 2002)

Client : **Assistant Executive Engineer,** Shetty halli Sub Division, BBMP, Bangalore.

Agency : **Sri.Umesh H.C,** Contractor, Bangalore.

Name of Work : Repairs to Culverts and drain in ward no.13, Shetty halli sub division, BBMP, Bangalore.

Reference : EE/DD/WO/81/2015-16 Dated:24.03.2016

Date of Testing : 30.06.2016

Material : 20mm Aggregates

Total wt. of aggregates in gms = **5000**

Is Sieve Size in mm	Weight Retained (gm)	Retained Weight in %	Cumulative Retained Weight in %	Cumulative Weight Passing in %	Spec.Limits
40	0	0	0	100	100
20	204	4.1	4.1	95.9	95-100
10	2314	46.3	50.4	49.6	25-55
4.75	2216	44.3	94.7	5.3	0-10

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Job No.: CECTC-UHC-W.No.13-2016-17 Date: 01.07.2016

TEST RESULTS OF PHYSICAL PROPERTIES OF REINFORCEMENT STEEL

Client	:	**Assistant Executive Engineer,** Shetty halli Sub Division, BBMP, Bangalore.
Agency	:	**Sri.Umesh H.C,** Contractor, Bangalore.
Name of Work	:	Repairs to Culverts and drain in ward no.13, Shetty halli sub division, BBMP, Bangalore.
Reference	:	EE/DD/WO/81/2015-16 Dated:24.03.2016
Sample Identification	:	16mm, TMT Fe 500 Bars
Technical Reference	:	IS 1786:2008, IS 1608:2005, IS 1599:1985 (Reaffirmed 2006)
Date of test	:	01.07.2016

S.No	Brand	Nominal size (dia in mm)	Mass per metre (kg/metre)	TENSILE STRENGTH		
				0.20 % proof stress/ yield stress ($N/mm^{2)}$	Tensile strength ($N/mm^{2)}$	Elongation, percent on gauge length
1	Fe 500	16	1.58	610	625	20.0

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Job No.: CECTC-UHC-W.No.13-2016-17 Date: 01.08.2016

TEST REPORT ON CONCRETE CUBES

Client : **Assistant Executive Engineer,** Shetty halli Sub Division, BBMP, Bangalore.
Agency : **Sri.Umesh H.C,** Contractor, Bangalore.
Name of the work : Repairs to Culverts and drain in ward no.13, Shetty halli sub division, BBMP, Bangalore.
Reference : EE/DD/WO/81/2015-16 Dated:24.03.2016
Sample ID : Cement Concrete
Size of cubes : 150mmx150mmx150mm
Cross Sectional Area : 22500 mm^2
Technical Reference : IS: 516-1959 (Reaffirmed 2008)
Grade of Concrete : M_{20}
Compressive Strength as on : 28th day

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	04.07.2016	01.08.2016	8.169	489.3	21.75
2	04.07.2016	01.08.2016	8.174	502.7	22.34
3	04.07.2016	01.08.2016	8.201	516.3	22.95

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Job No.: CECTC-UHC-W.No.13-2016-17 Date: 01.08.2016

TEST REPORT ON CONCRETE CUBES

Client : **Assistant Executive Engineer,** Shetty halli Sub Division, BBMP, Bangalore.
Agency : **Sri.Umesh H.C,** Contractor, Bangalore.
Name of the work : Repairs to Culverts and drain in ward no.13, Shetty halli sub division, BBMP, Bangalore.
Reference : EE/DD/WO/81/2015-16 Dated:24.03.2016
Sample ID : Cement Concrete
Size of cubes : 150mmx150mmx150mm
Cross Sectional Area : 22500 mm^2
Technical Reference : IS: 516-1959 (Reaffirmed 2008)
Grade of Concrete : M_{20}
Compressive Strength as on : 28th day

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	04.07.2016	01.08.2016	8.155	495.3	22.01
2	04.07.2016	01.08.2016	8.194	512.4	22.77
3	04.07.2016	01.08.2016	8.216	523.6	23.27

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Job No.: CECTC-UHC-W.No.13-2016-17 Date: 02.08.2016

TEST REPORT ON CONCRETE CUBES

Client : **Assistant Executive Engineer,** Shetty halli Sub Division, BBMP, Bangalore.
Agency : **Sri.Umesh H.C,** Contractor, Bangalore.
Name of the work : Repairs to Culverts and drain in ward no.13, Shetty halli sub division, BBMP, Bangalore.
Reference : EE/DD/WO/81/2015-16 Dated:24.03.2016
Sample ID : Cement Concrete
Size of cubes : 150mmx150mmx150mm
Cross Sectional Area : 22500 mm^2
Technical Reference : IS: 516-1959 (Reaffirmed 2008)
Grade of Concrete : M_{20}
Compressive Strength as on : 28th day

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	05.07.2016	02.08.2016	8.163	501.2	22.28
2	05.07.2016	02.08.2016	8.184	520.7	23.14
3	05.07.2016	02.08.2016	8.210	486.3	21.61

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Job No.: CECTC-UHC-W.No.13-2016-17

Date: 02.08.2016

TEST REPORT ON CONCRETE CUBES

Client : **Assistant Executive Engineer,** Shetty halli Sub Division, BBMP, Bangalore.

Agency : **Sri.Umesh H.C,** Contractor, Bangalore.

Name of the work : Repairs to Culverts and drain in ward no.13, Shetty halli sub division, BBMP, Bangalore.

Reference : EE/DD/WO/81/2015-16 Dated:24.03.2016

Sample ID : Cement Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm^2

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

Grade of Concrete : M_{20}

Compressive Strength as on : 28th day

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	05.07.2016	02.08.2016	8.172	506.4	22.51
2	05.07.2016	02.08.2016	8.204	519.7	23.10
3	05.07.2016	02.08.2016	8.153	484.5	21.53

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Job No.: CECTC-UHC-W.No.13-2016-17 Date: 04.08.2016

PRECAST SLAB (CORE) TEST REPORT

Client	:	**Assistant Executive Engineer,** Shetty halli Sub Division, BBMP, Bangalore.
Contractor	:	**Sri.Umesh H.C,** Contractor, Bangalore.
Name of Work	:	Repairs to Culverts and drain in ward no.13, Shetty halli sub division, BBMP, Bangalore.
Reference	:	EE/DD/WO/81/2015-16 Dated:24.03.2016
No.of Sample Tested	:	03
Date of Testing	:	04.08.2016
Techinical Reference	:	IS:516-1959 (Reaffirmed 1999), SP-24:1983.
Grade of Concrete	:	M_{20}

Sl. No.	Dia of Core D (mm)	Height of Core H (mm)	Core Wt (Kg)	Density of Core (kg / m^3)	H / D	Correction factor (Based on H/D)	Failure Load (kN)	Core Strength (N/mm^2)	Correction Factor for the Dia. (Strength of the Core x 1.08)	Corrected Cylinder Compressive Strength (N/mm^2)	Equivalent Cube Compressive Strength (N/mm^2)
1	50.00	75.00	0.340	2308.81	1.50	0.960	33.85	17.24	18.62	17.87	22.34
2	50.00	70.00	0.315	2291.83	1.40	0.960	35.20	17.93	19.36	18.59	23.23
3	50.00	80.00	0.390	2482.82	1.60	0.960	32.90	16.76	18.10	17.37	21.72

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